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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,024	01/16/2001	You Kondoh	M-10944-1C US	9400

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EXAMINER

WILLE, DOUGLAS A

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 03/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/764,024

Applicant(s)

KONDOH ET AL.

Examiner

Douglas A Wille

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 36-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8, 10, 11, 16, 17, 36-42 and 44-46 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 9, 12-15 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 11 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

3. Claims 11 describes a bonding layer as being a multilayer structure but there is no disclosure in the specification describing what the materials of the structure are, the thickness of the layers or the number of layers and is thus not enabled. Claim 16 refers to the fixation layer as being multilayered and is similarly not enabled.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 42 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 42 states the barrier surrounds the part of the electrode not covered by the barrier. It is not understood what this means.

7. Claim 44 states the barrier covers the entire surface of the electrode not in contact with the stack. This is not understood. What's not in contact?

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 7 – 11, 17, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. in view of Kitagawa et al.

10. With respect to claims 1 and 36, Nakamura et al. show a GaN substrate-emitting LED (see cover Figure and column 3, line 40 et seq.) with a p-contact that could be Ag (column 6, line 66) but does not show further layers. Kitagawa et al. show a luminescent device (see cover Figure and column 3, line 30 et seq.) that has a p-electrode 16 and a protective film 17 that protects the electrode from deterioration (column 5, line 10). Since Ag is subject to deterioration in a similar fashion to that shown by Kitagawa et al., it would have been obvious to use such a film to protect the Ag electrode. With respect to 50 %, it would have been obvious to make the Ag layer have the maximum reflectivity possible and this maximum value is a function of the LED material and the Ag electrode. Note Kitagawa et al. show a vertical extension of layer 16 which can be considered as a bonding layer.

11. With respect to claim 2, the material of the Nakamura et al. LED is a group III nitride.

12. With respect to claims 7 and 8, the layer 17 is an insulator (column 4, line 67 and column 5, line 12) and could be Al₂O₃.

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13. With respect to claim 10, it would have been obvious to make the bonding layer small since it is only the contact to the outside world and if a large size it would permit a large area of the electrode to be exposed.

14. With respect to claim 11 it would have been obvious to make the layer a multilayer structure to tailor its characteristics to a particular ambient.

15. With respect to claim 17, Nakamura et al. show both p- and n-electrodes and Satoh et al. show that the device will be packaged.

16. With respect to claim 37, the bonding layer and the protective layer are on different portions of the Ag.

17. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. in view of Kitagawa et al. and further in view of Satoh et al.

18. Nakamura et al. do not show the required thickness of the Ag layer but Satoh et al. show (see Figure 44B and column 34, line 9) an Ag electrode that is < 20nm to permit surface emission. It would have been obvious to modify the basic device to include an Ag electrode that is > 20 nm and therefore reflecting.

Claim Rejections - 35 USC § 102

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

20. Claim 38 – 42 and 44 - 46 are rejected under 35 U.S.C. 102(a) as being anticipated by Orita et al.

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21. With respect to claim 38, Orita et al. show (see cover Figure and column 5, line 32 et seq.) a stack of semiconductor layers 13 – 17 and a two layer electrode 18a, 18b. The metals can be selected from a group (column 4, line 15) which will not all migrate.
22. With respect to claim 39 the electrode can be Ag (column 4, line 14).
23. With respect to claim 40, the electrode is on a p-nitride layer.
24. With respect to claim 41 the metals contact the surface of the stack.
25. With respect to claim 42, in so far as it is understood, one metal is over the other.
26. With respect to claim 44, in so far as it is understood, one metal covers the other entirely.
27. With respect to claims 45 and 46, Ni is shown (column 4, line 13).

Allowable Subject Matter

28. Claims 5, 6, 9, 12 – 15, 39 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

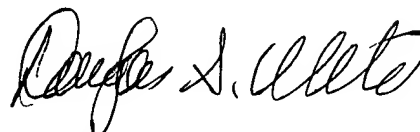
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas A Wille whose telephone number is (703) 308-4949. The examiner can normally be reached on M-F (6:15-3:45).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read "Douglas A. Wille". The signature is fluid and cursive, with the first name "Douglas" being more prominent and the last name "Wille" following in a similar style.

Douglas A. Wille
Patent Examiner

February 28, 2003